



MY NAME IS  
DIAMOND! DAN DIAMOND  
I'M A PRIVATE COP. I  
WORK THE BIG APPLE  
A SEETHING METROPOLIS  
FILLED WITH HUMAN  
MISERY AND CHINESE  
TAKEAWAYS.

NORMALLY I  
ONLY DO ROUTINE  
DIVORCE CASES BUT  
WHEN SHE WALKED  
INTO MY OFFICE I  
FOUND MYSELF  
INVOLVED IN A CASE  
SO STRANGE THAT  
IT MADE THE  
BIG SLEEP  
LOOK LIKE A  
CAT NAP...



NEWS  
HUNT WINS GRAND  
PRIZE

As yesterday's Women  
Grand Prix, a bustling party  
sprayed onto the track at the  
dinner of the race. Cars  
were halted as the launch  
rampaged around the sta-  
ge. "The whole place has  
gone to the dogs," one  
driver was reported as re-  
plying. The race was com-  
pletely around the corner  
before the Hunt thundered  
past the finishing line to take  
the checkered flag (in fact it  
hasn't been seen since).

PLAYER WINS OPEN  
Eagle-eyed spectators  
presided over the

# Salamander SOFTWARE

## PRIVATE DETECTIVE DISAPPEARS

Police are baffled by the disappearance of Dan Diamond.  
He was last seen approaching the civic center known as  
Franklin's Tomb, but the authorities are completely un-  
able to find any trace of him. Citizens are asked to  
report any information relating to his disappearance  
immediately. For further details, see FRANKLIN'S  
TOMB, a new adventure game for the IBM PC and  
IBM XT/AT. The adventure  
game complete with a 24-page  
illustrated Case File, 60 to 80 hours  
of play, SPECTRUM COM-  
MUNITIES FOR ALL, with  
many more.

BANANA  
DICTATOR

### THREADS EVEREST TRAGEDY

The Everest Expedition  
ended in tragedy af-  
terwards as Carl and his  
plunged down a cre-  
vice to a grisly death. His  
expedition has  
been reported as the  
"Tale of the Unknown".

COLD WAR ON  
KANG ESCALADE

Thousands dead  
in the States  
from the US

## The Team

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ABC

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### How to submit articles

Articles which are submitted for publication should not be more than 2,000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted.

All submissions should be typed and a double space should be left between each line. Please leave wide margins.

Programs should, whenever possible, be computer printed.

We cannot guarantee to return every submitted article or program, so please keep a copy. If you want to have your own program returned you must include a stamped, addressed envelope.

### Accuracy

Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

## This Week

### News

Dragon rescue

### Letters

Monodrive reply

### Star Game

Astro-transporter on Vic20

### Street Life

David Kelly visits Markesh Games

### Review

Brian Cudge looks at Dragon software



### Programming

Vic20 game-writing — part IV

### Spectrum

Solving quadratic equations

### Dragon

Code secrets revealed

### BBC in education

30 star cluster

### Commodore 64

Funcon kept by Les Allan

### Open Forum

Six and a half pages of your programs

### Adventure

Tony Clarke's corner

### Peak & pole

Your questions answered

### New releases

Latest software programs

### Competitions

Puzzle, Top 10, Ziggurat

## Editorial

The £3.5m rescue package engineered by Dragon's shareholders is another indication of the volatility of the micro market.

Eighteen months ago, no one had heard of the Dragon 32. Nine months ago, the Dragon had become one of the best selling micros in the UK with more than 50,000 units sold. Now the wheel has come full circle, with Dragon struggling to stay afloat in the face of increasing competition from Commodore and Sinclair.

Dragon's problems have been due partly to under capitalisation, but also to the rapid pace of technological change. Nine months ago, the Dragon with its 32K of Ram and full-sized keyboard, seemed like a good buy at £189 — especially in competition with the aging Vic20 and the delivery problems of the Sinclair Spectrum. Now, however, even at £175 the Dragon is not such a bargain compared to the £125 48K Spectrum and the £169 Commodore 64.

One can only feel sympathy for Tony Clarke, Dragon's former chief executive and managing director. He was a popular figure within the micro industry who not only brought Dragon into being, but also masterminded the company's recent link-up with Tandy in the US.

While Dragon's future will depend very much on the soon to be launched Dragon 64, a number of other micro companies must be looking nervously over their shoulders — Oric, Jupiter, Cantab and Computers in particular.

## Next Thursday

Thousands of free software cassettes to be given away — for details, see next week's issue.

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## Digital Research puts CP/M on home micros

DIGITAL Research has announced its intention to enter the personal computer arena.

CP/M, launched by Digital in 1977, has become the dominant disk operating system for 286-based microcomputers in the business sector. More than 6,000 software packages are now available for the system.

Now, Digital has announced a version of CP/M — Personal CP/M — for home computers, regardless of processor. Also, the system can be put on Rom and is therefore capable of being used on systems which do not support a disc system.

Said Digital's director of European operations, Paul Bailey: "People are getting tired of copying Slogans and are looking to do something

more serious in life."

The new Personal CP/M needs to be distinguished with another new digital product — Visual Interface Processor (VIP). VIP is a collection of around 60 simple input/output routines providing "windows" on-screen rather similar to the sort of thing that Apple's Lisa can do. Commands might be, for example, file handling ones such as View, Extract, Help and Edit.

These, together with a compiler for the relevant processor, mean, in principle, that any software written to be compatible with VIP can be run on any machine.

While Personal CP/M there is no reason why the wealth of software available under CP/M should not be translated to run on any home micro.

That is least is the hope. Digital has announced the system in the belief that micro manufacturers will see its advantages and adopt it.



Personal CP/M

At the moment, it seems that only three manufacturers committed to CP/M 2.2 — the present CP/M version — are showing interest in the new Personal version.

Both Acorn and Computers are looking at VIP and Personal CP/M. Computers has just signed an agreement with Digital to put CP/M 2.2 operating system on to its Link Light, to be shown at this year's Personal Computer World Show. A Computers spokesman commented that VIP and Personal CP/M on the Link is "likely".

It remains to be seen if other home computer manufacturers like Sinclair, Commodore and Oric show interest, particularly in the Beta version of Personal CP/M, and whether software houses who have written for CP/M intend to do the same.

## Visions of the future

VISIONS is a new software house launched this week.

It will produce mainly games titles, across a range of five machines — Sinclair Spectrum, Commodore Vic20 and ad and Acorn BBC, and Electron. Two games are now available, *Short Flimsy* and *Phantom 7*, for the BBC and BBC Spectrum respectively. A version of *Phantom 7* will be available by the end of September across all five machines.



Sue Evans of Visions

Sue Evans, Visions' managing director, was previously in charge of franchisee author licenses at Quicksilver, before leaving three months ago to set up her own company, joining him as director are Roy Davis, formerly with Quicksilver's public relations company Phoenix, John Burdett, an electronics engineer in charge of Visions' in-house tape duplication facility, and Martin Forrester, Visions' financial director.

Prices, British distribution of Sinclair products and the company's initial Microsoft RM, has a 26 percent stake in Visions, and Prime directors Bob Denton and Richard House are non-executive directors of Visions. Richard House is also chairman of ELL which publishes among other things, *Sinclair User* magazine.

## Dragon rescue

Continued from page 4

The crisis has affected Mitelco — the law-making Corp. Its maker who originally spinoff Dragon just over a year ago. Following its sale to Dragon in November to the French consortium, it is now unable to contribute to the rescue venture and has had to reduce its stake at the expense of the other shareholders.

The new shareholders break down as follows: Patrick (42 percent), Welsh Development Agency (23 percent), Mitelco (15.9 percent), National Water Council (8.6 percent), F & L Enterprise Trust (4.8 percent), Investment Development Capital Fund (4.5 percent) and Dragon consortium (2.3 percent).

Apart from persistent rumors in recent months that Dragon's sales had slumped, the bad real indications that Dragon was in serious trouble came early on Friday morning. Mitelco announced — under stockmarket rules — that its "associate" company Dragon Data had suffered a "set-back".

In the period of speculation between that announcement and Dragon's notification of the rescue plan late in the afternoon, Mitelco's shares plunged from 17p to, at one point, a nominal 2p. They recovered somewhat to close at 10p.

## Magical mystery tour by bus



VIRGIL (Clashes has announced eight new titles — and a bus!

The new games are: *Death Castle*, *Castle Adventure* and *1* *Clash for the Dragon*, *Forwards* and *Champions* for the Vic20 and *Killer Caverns*, *Levi's* and *Rising Manager* for the Spectrum (the last two were previewed at the late ZN Microshow).

As for the bus — it will tour the country filled with computers and programmes just along to tell you about Virgin Games. Four dates will be announced soon.

## NewBrain buyer?

CHIMPY Business Systems, which announced it was to go into liquidation two weeks ago, is now looking for a buyer for its NewBrain computer project.

Eight companies are reported to be interested in the NewBrain.

At meetings of both creditors and shareholders to be held today, September 6, Tim Harris of Deloitte is expected to be appointed liquidator.

## Option extended

SINCLAIR has extended its option to acquire a major portion of the assets of the former De Lorean car factory in Downpatrick, Northern Ireland.

The company is looking at the Downpatrick plant as a possible site for assembly of its proposed electric car.

The Sinclair Vehicle Project has extended its option for an undetermined period to allow time for further separate discussions with both the joint De Lorean owners and the Northern Ireland Industrial Development Board.

# ANIROG SOFTWARE



## MISSILE DEFENCE

### MISSILE DEFENCE

Bring the world's most powerful missile to life in the Spectrum version of this exciting action. Defend your cities from the missile onslaught and enjoy scoring 10 and 20 points.

MSX/25

100/100

£5.95

### SLAP DAB

An exciting aerial battleship the aerial game. Partner ships combine to take out war ships. Slap dab players make a better one and more. Slap dab is designed for your own fun. You require two action and quick thinking to complete and finish the game. The game is 100 percent playable and can be played on Spectrum, MSX/25 and MSX/100. Complete your collection of tapes and games today.

MSX/25

100/100

£5.95

### GALACTIC ABDUCTORS

A stunning action-packed game with superb, super-coloured graphics. Galactica Space Wars is a game and game in a package. As you play, your steadily improving score will keep you from the game. Galactica is a game and game in a package. As you play, your steadily improving score will keep you from the game. Galactica is a game and game in a package. As you play, your steadily improving score will keep you from the game.

MSX/25

100/100

£5.95

### FRIGGUN

Popular arcade game. Friggun is a game and game in a package. As you play, your steadily improving score will keep you from the game. Friggun is a game and game in a package. As you play, your steadily improving score will keep you from the game.

MSX/25

100/100

£5.95

### TINY TOT'S SEVEN

Super game and the strongest theme with super-coloured graphics and sound effects. Tiny Tot's Seven is a game and game in a package. As you play, your steadily improving score will keep you from the game.

MSX/25

100/100

£5.95

### AVAILABLE SEPT. 1983

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# SPECTRUM

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## Microdrive reply

I feel I must reply to the letter from Sinclair Research (PCW 18-24 August) about my Microdrive review.

Regarding the use of Tab with printers via RS232C — it is possible to implement the command on any printer. For evidence of this, one has only to examine any of the Commodore printer interfaces for the Spectrum which all support Tab. It is an important feature that has unfortunately been left out of the Interface Rom.

I admit that handbaking is done when networking — I became confused with handbaking over the Net, which does not use it.

Regrettably, protected programs will not be "impossible" to print — it would be foolish for anyone to make such a claim.

JOE MASON  
London (NW)

## Machine code pen pal

I have also experienced the problems concerning *Jagpac* your magazine . . . why not have a machine code helpline as well as (or preferably instead of) that stupid advice helpline!

Think of it . . . you could start a whole new pen pal section, especially for machine code. I think a regular section just for the would-be increase the number of your readers — I, for one, intend to buy all of your back issues with no further hesitation.

If you don't think the pen pal section would go well, how about putting a word in for us (as the first one!) to advertise for the main . . . something like — "Wanted (occasionally alien) — machine code pen pals to swap ideas and sometimes with. Tel: 011-440 1133 and ask for Stephen." Not forgetting to mention that all must be relevant to the Spectrum computer (in my case, anyway). I look forward to hearing your views on my idea.

Stephen Kenyon  
Gwent  
Berkshire  
Cambridge  
Morbidity  
Seinfeld EYES (TV)

Stupid advice helpline?! A lot of our adventure playing readers would disagree strongly if I hoped.

However, the idea of a machine code helpline is interesting. If any of our other readers would like a machine code pen pal section, please write in and let us know.

## Ultimately the best

I have also experienced the problems concerning *Jagpac* mentioned in the letter from Philip Stone (PCW 25-31 August).

When all four rockets are used, the program returns to the first rocket and is liable to crash any time after that up picking up an object, losing a life or when a rocket reaches the top of the screen. My high score, however, is 923,675 and took around 3½ hours — it was achieved by lingering on the high-scoring orbits.

I have now been informed of a method of obtaining an infinitely high score. I have always noticed that points are scored when an alien crashes to the ground on the fourth shot. If you stand on the mobile platform you will not be hit, as it is a "safe area". You can even switch off the television and come back in a few hours to a very high score. PS. I still think *Ultimate* is the best.

Mark Simpson  
3 Kingswood  
Wiltshire  
Leeds LS27 8LS

## Watergate scandal

I got your magazine every week. The only quibble I have is about your reviews of new games at the back.

Lately have some detailed recommendations, tell us if the games are terrible. Are you worried about offending the manufacturers, as is some hobby reviewer? Another Watergate in the offing.

Why not rate the games with factors like playability, graphics, add-on/extra etc? In the tough world of cloning software, it's difficult not to get lashed with a mass of boring brown tape.

PS. Do such mysterious things as computers do over in Northern Ireland, or are those fantastical things just

confined to the London area? PS. Are there any BBC test clubs in Northern Ireland?

PPS. Is my score at BBC Pleasureland of 704,000 any good?

R J Pate  
17 Knockree Gardens  
Belfast BT4 4LZ

To answer your question in order, another Watergate is not in the offing. No hobby is involved and we are not worried about offending the manufacturers.

New Reviews is designed to let people know what software is coming on to the market. Each new release consists of a basic description of the game or utility, together with details of price, moves, supplier, etc. The object is to provide people with news, not reviews.

Your points about rating the games are covered in our software reviews.

I must confess that I do not know of any shows in Northern Ireland, though a few seem to be cropping up in films.

There is a club now club in North Down which meets at Bangor Central Library, Hamilton Road, every fourth Monday, but it is not aimed specifically at BBC users. For more information contact A. Roberts on 0149 07668.

Finally, your Pleasureland score seems relatively reasonable.

## Copying the copiers

I read with interest the piece about tape copying using Zap in *Pink and Pinks* (PCW 18-24 August).

*Zap* and *Zap2* can be copied if you know where it is stored. By using the header reader program, it was found that *Zap* is stored in the games buffer (at address 23364).

Using the header file by typing in "Save zap" Code 2326,233" and Save the header only, not the second part of the program. Then, using *Zap2* (used for copying headerline programs — which I haven't come across yet) to copy the second part of the program and have it after the header you have just made.

*Zap2* can be copied in the same way, but it has only 436 bytes (to Save "Zap2" Code 2326,436).

I hope this is of help to others who wish to copy ciphers.

Andrew Foster  
46 Brough Park Road  
Pargrave  
Devon TQ14 3JA

## Improving on Pacman

Thank you for publishing my two efforts at programme using on the Spectrum (*Pacman* "Killer of the Week" Vol 2 No 28, and *Atom Pacman* "Epic Pacman" Vol 2 No 32). Here are a couple of improvements for my *Pacman* program, which your readers might appreciate.

Lines 1005, 1, 2 and 240. Then add the following:  
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# Astro-transporter

A new game for the unregarded VIC20 by Gerald M. McCarthy

In *Astro-transporter* your objective is to travel across deep space to a space station approximately 1,000 light years away. However, the route is a dangerous one containing many asteroids, meteors, planets and stars. On the way, you must pick up as much cargo as possible and also fuel — otherwise, the fuel warning will sound, then 500 fuel units later, the warning will become a continuous tone telling you that you are out of fuel and control.

Apart from fuel and cargo, the only other thing you are allowed to collide with is space dust, which is represented by multi-colored fluff clouds. If you fail to do this, you will lose one of your three lives, graphically represented after each loss.

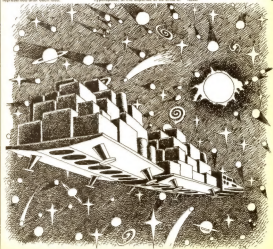
After 500 light years, you will come to a section of space entirely consisting of fuel and cargo. This is where the good pilots pick up most of their profit. However, another 500 light years on, you reach normal space again but this time with even more asteroids. After navigating through 500 light years of this, the space stations start to appear with which you must dock, hoping it is friendly not hostile. If friendly, you will then be told your profit, how selling excess fuel and the cargo, and the time you took. If the base is hostile, you will be captured along with your profit.

The *Z* and *C* keys move left and right respectively, each using 10 units of fuel per move. The *B* key will send you into hyperspace, at the expense of 50 units of

fuel, resending you randomly. As a final resort, you have your short range laser which destroys everything in the space directly in front of your ship at a cost of 250 units of precious fuel.

## Program notes

- 10-00 Setting up variables etc.
- 110-000 Screen set up and collision checks
- 200-000 Distance between objects and variables up date
- 3000-1000 Instructions
- 3000-1000 Subroutines for graphics of planets and stars
- 4000-4500 Ship destroyed routine
- 4500-5000 Game lost routine
- 5000-5500 Credits
- 5500-6000 Space station graphics subroutines
- 6000-6500 End of journey results
- 6500-7000 Warning. The screen keys have been given automatic modes.







# Masters of conflict

David Kelly talks to David Martin, one of the partners in Martech Games

**C**ONFLICT is a board game. But not an ordinary one. Using computer moderation — all of the mechanics of winning the game is taken care of by a computer.

The idea of computer moderated board games is not new, but it is only with the advent of sub-1000 micros that it has become feasible for anyone to play them. No longer do you need to have access to a main-frame computer.

Conflict was the first such game, designed to work with the IBM Z801. It was launched over a year ago by Martech Games, an Indianapolis-based company founded by David Martin and John Barry.

David is the one who got Conflict together. A former chemistry teacher, he has long been a keen board-gamer. Like so many before him, he had submitted ideas to many of the traditional game manufacturers, only to have them turned down.

When the Z801 came out, David immediately saw the possibilities. "The deal is stated well," he says, "and to use the computer to replace the dice or cards found in most games."

The intention was not to write a game where one player battles against the computer — a *Star Trek* invasion. Instead, David wanted to design a game, with a board, in which a number of players could compete against each other and in which the computer is simply used to take out the drudgery-work of, for example, rolling battles.

"There is an awful lot in the game by playing against a number of evenly matched opponents," says David. "People are much more enjoying than computers. Once you get to know an ordinary computer game then you understand how it plays and it isn't ever going to surprise you."

"I wrote Conflict and I understand it completely, but when I play against other people it can never be quite as exciting."

It all depends on how good your opponent is. When Conflict for the IBM Z801 first appeared it was quite noisy, anything else being said for the machine.

Reaction to the game was universally favourable, although its sales were disappointing. "People didn't seem to know what to make of it — I think Conflict was ahead of its time."

David is undoubted and reckons that computer-moderated games are beginning to come into their own. "There is a much greater interest in things other than arcade-type games now — including strategy games like ours."

Conflict is available for the Z801 and Spectrum — versions for the BBC, Dis-



John Barry (left) and David Martin, co-founders of Indianapolis-based Martech Games.

gon, Commodore 64 and Atari machines will be released shortly. And its successor, a different board game — but still computer moderated — *Galaxy Conflict* — will also be available for the same range of machines.

Conflict is a strategy game played on a board with counters, and controlled by instructions and prompts from a micro. The play involves capturing territory, surveying and drilling for oil, becoming wealthy, buying armies and munitions, capturing more territory and drilling again. The winner is either the first to get an army into the enemy city, or the player who controls the most territory after an agreed number of moves.

David's original idea was to develop a game for up to four players but the workings of it proved ill for too complex. It took three or four hours just to get started. It was back to the drawing board.

So Conflict — which is a two-player game — arose out of trying to simplify the whole thing.

The beauty of a computer-moderated game is that it can do things that conventional board games cannot. In Conflict, for

example, you make money by drilling for oil. Neither player knows where the oil is and it is in a different place each time the game is played. Its location is determined randomly by, and known only to, the computer.

"Imagine trying to do that with a conventional game — turning over a card which says 'You have struck oil', explains David. "It's just not the same."

Having designed the game, the fun really started — trying to get the package together. "I should say, believe, there is only one company in the country which makes plastic counters with numbers on."

Now the game is ready, they will be marketed by Gemini — Colour Games and TRS80 versions are also under way through an arrangement with Moyman.

Martech is also producing some more conventional games for the Spectrum and Orc, as well as taking on a marketing role for Quent Software. Quent's *Phoenix Attack* on the Oric goes on to the Spectrum and a new game for the Spectrum, *Snake Over*, and *Starfighter* for the Oric will be out soon.

Under its own banner, Martech will be selling an adventure for the Vic20 and Commodore 64 machines called *The Quest of Mermaid Island*. David Martin, has quite a sense of humour.

Also, because of David's background, Martech has struck with a publishing company to produce some learning material which will be both educational and entertaining — designed for the home rather than for use in schools.

That is not to say that David has given up on computer moderated games.

"There is another one I want to do. And it will definitely contain some arcade features."

At various points in the game one player or the other will have to overcome some kind of arcade-type obstacle either against the computer or against the opponent.

And it will be possible for the game to be played by only one player against the computer — but still making use of the board and pieces.

Says David: "When that comes out it will take computer-moderated games a step further."



# Reaching for the peak

Brian Cudge looks at the perils of climbing Everest in his latest review of Dragon software

Four adventures, two arcade games and two utilities make up this lotus at the latest software for the Dragon 32. The general presentation of the programs has noticeably improved with this selection — four of the programs are supplied in book-type or mini-video boxes — as has the accompanying literature.

**Passions:** From the Salamander Software is a text-only adventure game. The difference is that all of the illustrations of the places of interest are in an 18-page manual supplied with the tape. The scenario takes you, as Ben Diamond, a private eye down to his luck, enter the scene. Whoever wrote the introduction certainly has a sense of humor; here's a short quote from the text:

"Down on the street, I got out a cigarette and waited for a cab. A man walked past me.

"You got a light, Mac?" I asked.

"No, but I got a date before I could get the reply," I said to him. And so it continues with every going place you can think of.

The program itself uses the whole 32K of memory for its many rooms and corridors. The game will recognize 50 verbs and 50 nouns. The screen display is formatted and is excellent — the left is used for a description of where you are, the right for an inventory of what you are, currently carrying and the bottom three lines are used for communication between computer and player. There is also a useful save game facility, so that you can come back to the game at the same point. ■ Another time.

I cannot say too much about the game itself, as this would only spoil it for anyone playing it. Needless to say, the game involves exploring the rooms, collecting certain items and avoiding the booby traps. When you do eventually solve it, a message appears suggesting that you go out and buy their next adventure!

This program has that something about it which other adventures lack, making you want to play up to all hours in a vain attempt to solve the puzzle. At £9.95 **Passions** is worth every penny — this will become a classic. A help sheet is also available from Salamander for anyone who is agonizing over the game and whose patience has run out.

Moving on to the other offering from Salamander featured here — **Everest** is a role-play-adventure game which involves sending a team up Mount Everest or one of two other easier mountains. The option of climbing in the Spring or Autumn, effectively allows you to vary the skill level of the game and you can also decide what weapons go to better camp.

The excellent commands of six climbers, represented by their initial letters. You

decide whether they climb alone or in pairs, with or without oxygen and what supplies they take with them to the next camp. This is all done via error-trapped selection routines on the screen. When all details have been finalized, the men set out and the screen switches to a high-res black and white display of the mountain, showing the climbers and how much time they have left before they must reach camp. The display is somewhat simple but useful.

At any time, you can call up an information screen to find out such things as the weather forecast and medical reports on the climbers. The simulation is very accurate — let the climber go short of food, or oxygen, or exposed

him to the elements for too long and you have a death on your hands. If three or more members die, the attempt is abandoned. Your score and a rating is shown at the end of the game.

All is explained in the instruction sheet, which also has some useful hints for avoiding disaster. I have to say that on first

playing the game I wasn't very impressed, but after several attempts, I am now a dedicated fan. The price is a very reasonable £7.95 for a cassette or a book type or mini-video box all used for all Salamander's games. Both of the games featured here carry the Dragon Data seal of approval.

Grandad's **Win** by Interact is the cheapest adventure in this series at £6.00 and this is reflected in its packaging — the box is glued to a sheet of cardboard with no playing or loading instructions. The game involves racing round a house trying to find the exit before someone else does. Once again, this is not only.

I was not very impressed with this game from the start. The commands which must be given to the computer are pedantic to say the least — often you will be stuck, trying to find the sentence which the program will accept, even if you know what you want to do.

The first adventure game is **Adventure Plus** from Premier Microsystems. The game comes in a mini-video box with some instructions on the back, and is once again a text-only adventure with two word dictionaries to the computer. The screen layout is nowhere near as good as Salamander's — for example, you have to keep

typing **list** to see what you are carrying, and the descriptions keep scrolling off the screen. There is no **save** game option either.

The game is set in and around an old house which you explore in search of treasures, typing help occasionally gives a hint on what to do next in times of despair. The game is not as compelling as **Franklin's Tomb** and doesn't seem to have as many locations to explore (although I may be doing it all in haste here as I haven't managed to solve this one yet), responses times are however faster.

As usual, there is an obstacle to get past before starting the game proper — in this case a gate. Getting the actual word the computer wanted is the main problem, not finding out what you need to do. When lost in the forest at the start of the game you are allowed to go in any direction, but whatever direction you take you always end up back at the gate, so that a bag? If it isn't, it seems a bit silly to me!



Although **Everest** and the main features of a text system for the Dragon, there is no mention of how to transfer the program to disc for drive owners, although this would be simple enough as the program is written entirely in Basic. **Adventure Plus** will let you back £7.95 and, with a little swapping-up of the display, would be a decent addition to your collection.

**Star's Software** are quite well known for their compilation tapes, the latest is called **Family Programs** which includes eight programs — games, utilities and educational software. As is often the case, the programs are a mixture of good and not so good and some which should never have found their way onto the market at all.

Mostly of a minorish **Turbo**, **Stats** and **Quiz**. In the first, you start a time from any of the 100 or save the memory — a simple enough game, but made more enjoyable by the number of different songs available. There is also a graphic display of the rooms as they are played.

The maths program is the sort of thing you can leave five-year-olds playing on a rainy afternoon, although at the highest level many adults would have trouble with some of the questions. The program asks simple sums like: 5 + 2 = ? and gives you



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# Breaking the sound barrier . . .

*Peter Bartley looks at sound effects in the fourth of a six-part series for the Vic20*

**P**ossibly the most difficult thing about writing a game is thinking up new sound effects. With four voices there should be a whole range of weird and wonderful noises coming from our trusty Vic, but quite frankly, there aren't. For example, I don't know about you, but I'm fed up with boring "bass" when it blows up a machine. The following program gives a cute "craaaii" sounding noise instead.

```
10 FOR A = 15 TO 8 STEP -1
20 POKE 36876,A : POKE 36875,A
30 NEXT A
```

See? A little more interesting, and what's more, very simple. Actually, delaying noise and volume is a useful technique when creating sound effects.

Maybe, when experimenting, you've used a single *FOR*. Now let's create eight-type noises. How do you want considered using 2, 3, or even 4 steps to create more complex effects, using the value of one loop for the step length of another? Try Program 1.

Be careful when "nesting" loops in complicated expressions. Make sure they finish in the right order.

There are many different variations on this method. For example, one voice ascending, the other descending, and so on. Use your imagination.

Another interesting technique is to rapidly poke voices on and off, blase around with Program 2.

Fairly good, huh? Try Poking the volume on and off as well.

Page 135 of the Vic manual states that it is possible to "write-in" sound effects which do not halt any animation going on at the time. But there's no need to buy another book to find out how. Type in Program 3.

Before Poking the program, you should have guessed that it moves a "block" very quickly along the top line of the screen. Add

```
10 POKE 36876,0 : GOTO 10
```

The animation doesn't stop during the noise, does it? All we are doing is simply leaving our values at 0. Move into 36875 from the values producing the movement. Change the 1480 to 1476 to 7470. See what I meant? Program 3 gives the basic technique, with sound 8 and you'll soon be producing complex noises.

However, you must realise that however well-written your program, Poking sound for any registers still tends to slow down animation. Try

```
10 POKE 36876,0 : POKE 36875,15 : GOTO 10
20 POKE 36876,0 : POKE 36875,15 : GOTO 10
30 NEXT A
```

Repeat one second, right? Now add

```
15 POKE 36876,A : POKE 36875,A : POKE 36876,A
20 POKE 36876,0
```

See? Almost 3-4 times as slow if you 3-4 because 176 doesn't write in half-seconds. So, any game involving sound effects is going to be slowed down to a certain degree. Most of the time this is desirable (or doesn't matter), unless there is a lot of animation, in which case a technique is usually slow.



VIC 2000 can normally change from drawing basic pixel graphics within a program, you must first initialise, move a lock which lets you change which 8-bit pattern it you want to use. For VIC 20, proper use, you first set out what a block contains the 8-bit pattern and the VIC 2000. (a) 30 Return the line and move the cursor up to the next line you want to use. Press the (a) 3000 key and type 14. Return immediately. A message "to" should have appeared and should not disappear from the monitor screen when used. During the line you "set" up, in your case, to change from one to another, you can use a pattern 1 type "1000" for instead of the "14" key and add your "1000" for 1440 characters - Press (a) 3000

Finally, a quick word about colour. If you wished you could remember all the colour and colour combinations? Well, here's one way to do it.

Pop a colour colour and a border colour, set them 5 and 6 respectively. Find the numeric values of the colours you have chosen from the Vic keyboard -- as you would when Poking colour on to the screen (a) 0000 = 0, White - 1, etc. Then type in the following: Poke 36876 (140-0) on 0 and substituting your values for 5 and 6.

You can, in fact, produce all the colour combinations by this method, since the value for light blue is simply the value for blue plus eight, light green the value for green plus eight, and so on. You can't have light black or light white, so the numeric values 8 and 9 are assigned to orange and light orange. Also, remember that the value of 6 (border colour) cannot exceed 8.

Another interesting colour fact is that location 848 holds the value of the current colour code. Try Poking different values here. This is one alternative to using colour commands within *PRINT* statements.

BTW, the 14, 1 and the editing programs is becoming a little slow? Well, it could be on a little when moving your cursor around. Press (a) 3000 with any number less than 10 (all correct). Just for fun, Poke 36876 from Poke 36876, and try some typing.

Well, well, we'll be looking at music, as opposed to sound effects, including random music. Ah, don't run for cover. Yes, I know it sounds pretty horrendous at the best of times, but this program at least sounds reasonably tuneful.

```
10 POKE 36876,15
20 FOR A = 20 TO 1 STEP -1
30 FOR B = 135 + A TO 148 : A STEP = A
40 POKE 36876,B : POKE 36874,B
50 FOR C = 1 TO A : NEXT C
60 NEXT B : A : POKE 36876,0 : POKE 36874,0
```

Program 1

```
30 POKE 36876,15
20 FOR A = 240 TO 128 STEP -1
30 POKE 36874,A : POKE 36874,0
40 NEXT A
```

Program 2

```
10 POKE 36876,15 : POKE 36874,0
20 FOR A = 7680 TO 7760
30 POKE A,100
40 POKE A,32
50 NEXT : GOTO 20
```

Program 3

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## The root of the problem

**T** Ghey presents a program to solve cubic, quartic and quintatic equations.

I wrote the software in this program for the practical purpose of automatically determining the roots of quartic, cubic or quadratic equations. Iterative methods are often inferior — apart from the need to know roughly the location of each root, they are often unable to deal with complex roots without considerable effort.

You are warned, however, not to apply all routines blindly. Sometimes rather elementary algebraic considerations (or an auxiliary tool)

which immediately reveals that  $5$  &  $-2$  are the only two integer roots, the remaining two need be irrational. Your Spacious

© 2004 Blackwell Publishing Ltd *Journal of Internal Medicine* 255: 103–110

The loading, response to program prompts and questions on the screen. Answer 1 or 2 to questions 1 and 2, 3 or 4 for quadrants, cubes or quater. This is a useful utility for other various applications for a variety of other programs, eg. mathematics, graphics and other games as they are quite fast. All flow lines can be defined without affecting the program.

The *tslib* routine also has two separate methods, depending on the coefficients. For certain coefficients, it is convenient to use a logarithmic formula that evaluates the cube roots of unity. For others, it uses algebraic formulas that involve cube roots of unity.

11. <http://www.who.int>

For the quadratic routine, a real root for a polynomial cubic equation is first solved with the previous routine. Thereafter the quadratic is factored into two quadratics, that are solved using the first routine. All these routines only handle real coefficients, but these will yield real or complex roots.

Your Spectrum will print out the coefficients of the equation you have entered. Will you now input any real or complex roots? Enter 1 and give them all to you. These are no checks in the program designed to deal with awkward coefficients, or cases where the formulas may yield inaccurate results. In these cases, you will be told to enter real roots, coefficients, or that you may have a quadratic equation, etc.

**Figure 6**

You are entitled to modify these programs to cater to complex coefficients. Though the task is fairly complicated, it's illustrated with no more than one above. ■

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# A galaxy of stars

Christopher Bowerman presents a 3D star cluster program for the BBC model A or B

If you have ever enjoyed the spinning 3D spin calculations often seen on tv, then this program will allow you to do a similar thing — though not quite as fast, unless you have a second processor for your BBC micro, or access to a CRAY!

The program uses MODE1 to store two screens of stars and to flip between them. New positions for the stars are calculated and instantly plotted while the old ones are

visible. The newly plotted star positions are then revealed, the old ones are erased, and new ones instantly plotted in their place. These stars are then revealed and the process continues.

Proscop randomly selects the 3D co-ordinates for the stars — these points are scaled for perspective (Procscale) and are then plotted (Plotstar). Proscop then rotates the old positions about the Y axis.

The arrays X,Y,Z hold the 3D co-ordinates, while A and B hold the scaled two-dimensional positions for plotting on screen. A1 and B1 hold the current co-ordinates of the 3D array to be erased. P, on line 180, is the number of stars in your galaxy and it can be varied freely (but the program runs more slowly the larger the galaxy — try 12).

If you have a 32K machine, why not convert the program to MODE1 and flip between four screens — this should give a better impression of speed. You could also try inputting actual data into the arrays at line 180 and watch a real galaxy rotate! If line 110 is deleted no erasing takes place and a juddering cluster will be seen. The variations are almost endless!

```
10REM 3D STAR CLUSTER by C.BOWERMAN
20REM 101 C.BOWERMAN JAN.1983
30REM FOR MODEL A OR B BBC-micros
40C=0
50MODE1
60PROCINIT
70S=C+1:IF C13 CH:REM LAYER FOR PLOT
80PROCSCALE
90SCOL1,C:REM PLOT ON LAYER
100PROCROTCH
110FOR B=1 TO P:SCOL2,C:PLDTAR,A1103,B1101:HERT:SCOL1,C:REM ERASE INVISIBLE ST
ARS
120FOR B=1 TO P:A1101=A1101,B1101=B1101:END
130PROCROT
140ROT=0
150END
160DEFPROCROT
170R=360:30:REM DEGREE OF ROTATION
180P=2:REM NO. OF STARS
190REM MAXIMUM VALUES FOR X AND Y
200MX=1000:MY=1000:CR=90/2:CY=PI/2
210D1=PI,T1P1,Z1P1,ACP1,BCP1,A11P1,B11P1
220FORB=1TOP:P:B11=RB11:Z11=Z11:B11=RB11:Z11=Z11:RB11:Z11:Z11:RB11:Z11:Z11:HERT:REM PICK (X,Y,Z) F
OR STARS
230ENDPROC
240DEFPROCSCALE
250REM SCALE FOR PERSPECTIVE
260PROC=1TOP
270S=444/CIPI*6661
280X=X(P)+S*CX
290Y=Y(P)+S*CY
300IF (X>90 OR X<0) OR(Y>90 OR Y<0) GOTO320
310A(P)=X1B(P)=Y
320EXTF:ENDPROC
330DEFPROCROTCH
340IF C=1 V011P,2,7,0,0,0,1P,2,0,0,0,0,1P,2,7,0,0,0:REM TURN LAYER ONE NOW
350IF C=2 V011P,2,7,0,0,0,1P,1,0,0,0,0,1P,3,7,0,0,0:REM TURN LAYER TWO "ON"
360FORB=1TOP:REM PLOT STARS
370PROC1101,B111:PLDTAR,A111,B111
380NEXT
390ENDPROC
400DEFPROCROT:REM ROTATE ABOUT Y AXIS
410FORP=1TOP
420X=X(P)+COS(R1-2*PI)*S11100
430Y=2*P+COS(R1+2*PI)*S11100
440Z1P1=0:Z1P1=2
450NEXT:ENDPROC
```





## OPEN FORUM

Open Forum is for you to publish your programs and ideas. Take care that the listings you send in are all bug-free. Your documentation should start with a general description of the program and what it does, and then give some detail of how the program is constructed. We will pay the Program of the Week double our new fee of \$5 for each program published.

6011

Source: *U.S. Census Bureau, Current Population Reports, 1990*

This is a version of Amiga's Gold for the BBC model B. Although written mainly in Mode 2, it can easily be adjusted for the model A. It makes use of the sound and colour graphics for the BBC and is a 32-screen version of a Pac-Man clone.

Instructions are included in the program as to how to play, and the games include: Faraway, Putting Green and Water balloons of Golf. There are also holes of varying difficulties, work with the jotted notes of a waterhole (kites), up to the players can play, and it could take you as long as a day or weeks to master.

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[illegible]

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**Study Link** Kicks up the Highway account, defines categories, sets prices for most set of 11 new 2004 account books to the way

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0000-0000 - CHANGING THE NAME OF THE CLUB THAT YOU ARE IN THE  
0000-0000 - CHANGING THE NAME OF THE CLUB THAT YOU ARE IN THE

There has been <sup>1</sup>nothing to be done.

**Game play** - Action game, repeat character, simple, short, fast-paced

**Game style** - Action, short, simple, fast-paced

• as the hole is a circle then it makes out the  
pattern of the enlarged gear  
the holes and hole is whatever price

- **Learning Goals:**
- **Learning Objectives:**
- **Learning Outcomes:**

**15-00-0000** Physical health improvement: Program to improve mental and physical health of the community, aimed at reducing

**0000**      **0000**

**Keywords:** *depression; mood disorders; prevalence of depression; risk factors*

**Figure 1** *Staphylococcus aureus* as source of *qrrA* derived to three isolates

[illegible]



## OPEN FORUM

## Spectrum Save

## DISCUSSION

These statements are not intended to constitute an offer of securities.

electronic game in which the player controls an increasingly longer sequence of moves and colored lights.

A random number is generated in line 30 and is placed in the array which holds the participants list. This number is then used to

replaces the people, animals and plant products of the natural world.

Lines 93 and 101 use the `Std::find` function to convert the current element of `it` into a string to enable the program to check that the `tokens` contain the same value.

[illegible]

**Excerpt: Sage**  
 ...

Hello Universe

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The economic situation American people

Good attempts at making contact with other patients through interpersonal relationships.

It was able to create a 22 x 23 picture in the process. The video sound track,

creates the signal board as the picture is slowly built up on the screen.

Presumably, those with the 40-80 column add-on can use the data lines to create quite detailed pictures.

[illegible]

HANSEN, CHRISTOPHER  
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## Demon Invaders

on Spectrum

This program is a typical earth defence game using 10 user defined graphics. It contains full instructions and should easily

fit into the 16K machine.

The screen shows the view through the cockpit of a space ship. Using the normal cursor keys you must move the ship, avoiding gaps.

The game uses the variable scan to detect how many aliens have landed and let us detect how many aliens you have

destroyed.

Variable score keeps a record of this. The aliens are plotted randomly and the aliens are produced by random movement.

The game ends when eight aliens have landed, conversely if you manage to shoot down eight you have won.

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## OPEN FORUM

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[illegible]

[Download Knowledge](#)  
[for All Ages](#)

## Conclusions

1000

This program has been designed to work on the IBM® 3090 Computer or its equivalent.

Adjustment: It is fully water-tight and takes no more than 10 minutes to adjust to the new position.

[illegible]

Calendar  
Aug. 1st - 13th





☆☆☆☆☆☆☆☆

I'm thinking about getting your  
 music when you're well and  
 want to help! Can you  
 arrange to have them in a  
 portable cassette format  
 (I'm getting good speakers  
 so they won't hurt my  
 ears)? Or other alternatives  
 to allow a poor little being  
 — like you — to get the  
 things they want to



**NEW BOOK** *Career success at work*  
To produce the most interesting people you  
will need *play to your strengths!*  
**May 1980 or 1981** Approximate £10.00, machine  
number, 6007 00-00

Before commencing work in different settings, the therapist is encouraged to build a working relationship with the client and to establish the goals and objectives of the intervention. The therapist is encouraged to use a variety of techniques to help the client achieve the goals and objectives of the intervention. The therapist is encouraged to use a variety of techniques to help the client achieve the goals and objectives of the intervention.

**Table 1**

These studies are important because they show that the use of a single, standardized questionnaire can be used to assess the prevalence of mental health problems in a community. This is a significant finding because it suggests that the use of a single questionnaire can be used to assess the prevalence of mental health problems in a community, which is a significant finding because it suggests that the use of a single questionnaire can be used to assess the prevalence of mental health problems in a community.

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THESE RESULTS INDICATE THAT THE EFFECTS OF THE  
STUDY WERE NOT SIGNIFICANTLY DIFFERENT FROM  
THOSE OF THE OTHER STUDIES.

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**Abstract.** *Colony morphology* is the result of the interaction of the genotype and the environment. The morphology of a colony is determined by the genotype of the individual and the environment in which it grows. The morphology of a colony is determined by the genotype of the individual and the environment in which it grows.

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Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group and the experimental group. The control group received a standard training program, while the experimental group received a training program with a focus on the specific skills required for the task. The results of the training program were compared between the two groups.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26



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960 VDU23,252,0,34,124,126,127,127,127,
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970 VDU23,251,0,0,0,60,255,255,254,172
980 VDU23,250,0,0,14,127,60,60,7,7
990 VDU23,249,0,12,240,252,254,254,120,
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1000 VDU23,248,0,0,20,0,112,65,120,127
1010 VDU23,247,255,132,20,4,192,34,33,
  45
1020 VDU23,246,132,176,32,16,16,16,0,7
1030 VDU23,245,129,41,117,123,1,30,16,
  227
1040 ENDPROC
1050 DEFPROCscr:CLS:COLOR1:
1060 PRINTTAB0,0,"Lives"TAB420,0,"Score"
1070 VDU23,1,0,0,0,0:
1080 PGM:=170:0:0,0,0,0,0,0,0,0,0,0,0,0,0,
  140
1090 GOTO,END130:BACKT:ENDPROC
1100 DEFPROCIntro:
1110 PRINT""You must defend your
  asterisk from the invading space
  pirates."
1120 PRINT""Loading the asteroid are
  gas clouds which will deplete
  your shields if you fly into one."
1130 PRINT""The space pirates also drop
  boxing missiles of them can be
  shot down if one hits you it will
  destroy your ship."
1140 PRINT""The pirates also fire at you
  your ship can survive three hits
  by the cannon."
1150 PRINT""Use the up and down."
  cursor keys to move the TAB key
  to fire."
1160 PRINT""Press 'Q' to start."REPEAT
  UNTIL GET="Q"
1170 ENDPROC

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## Mainframe mania explained

Dennis Cox from Coventry, a veteran mainframe adventurer, has been a lot of trouble finding the adventure programs on the mainframe little ZIMs — the dedicated system programmers have put a toe on the machines, and they refuse to give up their topmost Zim. He has been reduced to writing his own adventure program, which sounds quite an achievement, as the computers run the language Exec (yes, he says Ziggurat would give us the benefit of his education, and show us exactly how difficult that might be).

I spoke a corner of the adventurer's playing for more and more memory — Dennis replies that he has over 4000K to play with!

You mention Star Trek. Dennis — yes, it is a good game, and there are many versions of it available for your home micro, which is a Spectrum. However, he says what must be a pretty good version, figuring as it does in many of the widely software credits.

Virgin Games has also released a virgin edition Star Trek, which is not bad at all. But I hope that by now you will have obtained that copy of the *Hyper* and found out, at first hand, what all the fuss is about. I hope, though, that I won't put you off writing an Exec!

I have noticed, however, that adventure programs on mainframes are becoming a threat to narrow security. Brian Wheeler is puzzled (beside a Warner somewhere, in the words of *Abandonware*) — as he's gaining the nation from the borders from the *Magpies*? No, you guessed it, he, along with the other boys of *IMF* (British) are becoming Master Class C Adventurers! He has a few questions that someone may be able to help him with:

1. Where is the Star?
2. What is the Star?

When working away from an adventure, writing a map is essential. Mark on the options available, along with all the words you have found. When you dropped them, in your wanderings.

Sometimes, the map may take on a significance of its own — there is a very technique are required (adventure in the *Magpies* for example) where the map, if the adventure has done one job, becomes a pattern which has a great importance. Does anyone know what you mean?

3. Where should you say the word 'Gibber'?  
4. How can you learn, and what should you do, with the 'Gibber'?

The word you mention, *Gibber*, is a new word to me, although most of the mainframe adventures have a code word or two — the most common ones being *Plugh* and *Byon*, along with *Sesame* and *Power*. It appears can help *Gibber* and its mates up there, please let me know. I wouldn't want them losing their sleep — being on. *Gibber*, are you sure *Gibber* is a *Space Invader* on your screen?

Another sector of the nation's security questions who have taken a liking to adventure games is the Customs and Immigration Department. Officer Joe Matthews splits the beans in a letter to the *Actual*. It is a hilarious account of a conversation between two Customs men and I wish that I could print it in its entirety.

Unfortunately, some high-level gaming (gaming and 'winks in ears') convinced to get their mainframe dominated and they have thus found themselves adventures! He says that one day I may come back, so stay for any tips or hints from some one from the *Master Class* — what about it, *Gibber*, from *Abandonware*?

Here I was talking to the fellow adventurer, and Customs men, over the phone. I really thought that I was going well. I realised that once I had got the hint (it is necessary, but I was going to get out of power, so I kept going back at that maze of twisted little passages until I found the way out. It was not all the machines to replace my batteries for me once they can do it.

What have I found? Well, I smashed the vase a couple of times until I realised that the power had to be stopped first, and it took me a while to find a heater source of water than the building to fit the bottle and water that was quite a couple of times.

I found water at the bottom of the pit. Which is? You know — the one part of the dirty passage and the dirty rocks above that complex junction. What? Near the low north-south passage which is south of the 'Q2 rock' — yes, that's the one.

Finally, I added the plant level and found the eggs and the robot. I soon realised that the robot ignored the plant, or should I say the robot and had to look around a bit for the company. What I want to know is, how do I get any more? Try north from *Godsdad*!

We'll have more from the struggle's based in a later week!

Jon Sanson has written from London (one stereo collection is definitely getting better lately) he is currently playing an adventure on the Apple, from *Raiders*, which sounds very much like the original *Colossal Cave*. I can't tell you more about the secret rooms, Jan, but you should find that you won't need your lamp in this room, so I should be all the time. And all the objects you mention will, indeed, have a use at some stage in the game — even the bear (it's waiting something around its neck).

Bernard Stafford, from the *Magpies*, writes,



to recommend, as an representation of the biggest mainframe program, *Abandon*'s adventure. He wonders, I there are any text adventures available for the *Vic20*, apart from the *Scott Adams* series, which tends to be a bit expensive.

Unfortunately, Bernard, this series is about the only subject that people write to me about, concerning the *Vic*. Some time ago, Mrs. Haddock-Smith wrote to me to give the same question. While passing the *Scott Adams* programs, she asked me to write people against the adventures from *Master Software* — although she found *Major Base Alpha* quite good, and difficult to solve.

Peter Clayton, who also owns a *Vic*, commented on the *Paul Taylor* program, which is advertised by *Quest* as an 'an epic 48K graphical adventure'. Peter says: 'I have already worked [14.00 on the *Taylor* game, with which I was very disappointed. Although the graphics were good after a low price, it seemed so repetitive that the game was hung up the bottom drawer.'

I remember my experiences with *Taylor*, when it was first released for the *2081* — the graphics for that time were, indeed, rather good. They were let down by the game, which turned out to be a series of open spaces, that as Peter rightly pointed out, become merely boring after a couple of days.

So, please let us all out of our misery — if you've played a good adventure on your *Vic*, let everybody know — write a review and send it along to the *United Wizard* (p. 88 right) — Mr.

Once again I'm out of space. We'll have another day out of the world of adventure again next week.

The series of articles is designed to move and experienced adventures. Each week, Tony Bridge will be looking at different adventures and writing you all about the problems and pitfalls you can expect to encounter. So, if you have an Adventure you want reviewed, or if you are stuck in an Adventure and cannot progress any further, write to: Tony Bridge, Adventure Corner, *Magpies* Computing Weekly, 12-13 Little Newport Street, London WC2H 9LL.





## MUSIC PROGRAM

Adrian Shepherd of Blackwell, Broomfield, Bournemouth, the following writes:

**Q** I came across the music program for the BBC in PCW, 11 October, 1982, and I decided to convert it to my VicII. After fiddling with little pieces of paper I gave up. Please could you tell me what the finer nuances were and how can I convert it to my Vic. Also, what does Flow mean?

**A** You will need to replace the BBC's random noise with a computer's random noise. Flowing is the effect of looking for any string within another.

So, if you were looking for A5 within B5, you would have to do it by writing up a loop to read the string B5, until you came to the first character of A5. This would then have to read A5 from that point, and compare it with A5.

Flow and Compare, used for Phord and Endphord, is a procedure a subprogram that is called by name rather than by line number. On the Vic you could replace it with Gosh-Kittens.

## AQUARIUS SUPPORT

Phil Harris of Wycombe Close, Bury St Edmunds, writes:

**Q** Like many people who are thinking of buying a computer, I find the choice bewildering. I have borrowed a friend's Z581 so I am not quite a complete novice.

I am considering a Spectrum, but my new computer that has caught my eye is the new Mated Aquarius which has just been launched. I know that the basic model is cheaper than the Spectrum, but then it

has less Ram. Importantly, I am worried that if I order one I will have to wait months, when I can go into a shop and buy a Spectrum directly. How well supported do you think the Aquarius will be, what sort of back-up will it have and what sort of costs are involved?

**A** The Aquarius is something a bit like the Spectrum in both Ram and Main. An extended memory base cartridge is planned for release later. As far as programming goes, a lot will depend on how quickly the hardware is available and on what resources are added (not subtracting from the in-built Basic).

There is a Ram slot on the computer shell however as there is only about 2K of user Ram available. I think people will quickly have to look at the prospect of buying the main expander, which will give you three-channel sound, two printer ports, a Rom and a Ram slot.

For further information, you can write to PCW, 11/12 August.

## SOUNDED OUT

T. Muth of Rochester Road, Middlesbrough, writes:

**Q** I have just won your award about the Atari and how it has quite good sound. I want to get a Commodore 64 and would like to know if its sound is as good as the Atari's.

**A** The sound on the Commodore has nice low channel or voice that the Atari, but each voice has up to five parameters that are controlled by Pulse commands. It is one of the ways how on the market, though it is correspondingly more complex to use.

The order to set up a sound is as follows — volume, the rate, the rate from 0 to 255. If you have higher numbers, then you can couple these with special filters, high pass, low pass and band pass. Attack Decay (this is controlled by splitting the value Pulse into two halves. The first half increases the attack and the second half lets control the decay).

Whereas this can also be controlled on the 64, and you

have the choice of triangle, sawtooth, pulse, and noise. Finally, there is a double Pulse to define high and low frequency. These numbers in comparison will give you a range of really severe noises.

## SPECTRUM QUESTIONS

For Key Len of Black MT, Middlesbrough, 12-14/08, September 1982, writes:

**Q** I came across Popular Computing Weekly recently in a local bookshop and since then have been an avid reader. In this part of the world we are relatively new to the world of computers, but I have decided to invest in a Sinclair 486 Spectrum. There are some questions that I would like to ask:

(a) My local distributor has told me that he can upgrade the memory from 48K to 128K maximum. Will this affect the performance of my Spectrum?

(b) From your magazine I gather that there are magazines that deal mainly with the Sinclair computers. Is it possible to subscribe them to me?

(c) Finally the 48K Spectrum range, would you recommend any other brand? This is not prejudice, just a customer wanting to get the best value for his money.

**A** Could you send me a list of the issues that deal with the time when the Spectrum was released?

I would also like to hear from any manufacturers, who would be able to provide me with 'computer food', as there is a growing need not here but all sorts of computer back-up.

**A** I have included this, because I am getting more and more letters from abroad. It is interesting to imagine a world devoid of 2K computers, no East-Coast or East-Coast shows, and where book-shops carrying a dozen or more computer magazines are unknown.

To deal with the questions in order — you should check

that your dealer will give you a guarantee to have the upgrade, because it will need the one that comes from Sinclair. Also, for your own use. Find out what sort of any memory banks the memory is made up of, and look at what this might mean to the sort of programs you want to write. If your programs are too big, you might find that you end up switching part of the program out, as you switch banks. 128K is very useful for both these programs, that use a lot of stored data.

As for dedicated literature, I would suggest that you contact LCC, who publish Sinclair User at 35-41 Aldgate Cross, London E3 9PL.

I never recommended a specific computer, but I have a couple of words of advice. In your particular case, I would suggest that you make your first program back-up. Select a computer that has a fairly local dealership.

The Spectrum 128 Upgrade and Popular Computing Weekly, all share the same family. We too reviewed the Spectrum in PCW, Vol 1 No 1.

## ECONOMIC SHARP

Al Morris of Poole, Dorset, writes:

**Q** I have a Sharp Aquarius, which I bought second-hand. I am quite happy with it, and quite a bit of software was included when I bought it. I need a program to help me with an economics project course I am doing. I am sure that I have seen an economics program for my computer but cannot find any mention of it now.

**A** I am not exactly what kind of program you need for your course. The best advice I can give is for you to contact Graham Knight, 100 Rownham Place, Abchurch Lane, London EC4A 3DF, who has a number of financial-type programs available.

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem PEEK & POKE in Beardsmore and every week he will PEEK back on many answers as he can. The address is PEEK & POKE, PCW, 12-13 Little Newport Street, London WC2R 2LB.











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## WALKIES

I think Barbara Woodhouse would be very good at the latest game from Llamasoft, since how you train your dog is a key feature in it.

Flower Weaver puts you in charge of an air stream — and garden desperately needing a trim. Unfortunatley, your neighbour is not too happy that you have taken it and starts to run after you as you mow. If you mow any flowers by accident, the gardener will also come after you.

But here, you might ask, does the dog fit into all this? Ah, well, this is where the subtle BMJ learning is important — as you mow, Rover (your dog) gradually gets more and more irritated by the sound and his dog tolerance level will gradually drop to zero — and he will come after you.

If Rover gets you, the mowing will have to stop for a while and you'll have to apologise. Rover can also be persuaded to chase the angry neighbour away but each time he does this his dog loyalty level drops — if it runs out, he will no longer respond to your commands.

The game reportedly has incredible graphics and a sound track arranged by a professional musician. But, as any vet vet, there are a large

number of people who quite understandably will buy anything by Jeff Minter.

**Program** Flower Weaver  
**Price** £1.50  
**Media** Commodore 64  
**Supplier** Llamasoft  
Jeff Minter Presents  
Llamasoft

## GAMES PACK



What can we tell you say about yet another Spectrum games pack? The one virtue of such things is for the computer owner who wants a few games to get him started without having to spend it a time.

Several games for C-64 would like good value, but you can be sure that if any one of the

games were marketable on its own it would be — since the games aren't, you can be equally sure they aren't going to be much above magazine quality — if that.

So, it's without any doubt that I see of another Spectrum Games pack containing Kamikaze Flight and Gopher that you will probably get exactly what you have paid for — no more, no less.

**Program** Kamikaze Flight  
**Price** £1.95  
**Media** Spectrum disk  
**Supplier** Block Byte Computing  
253 Newton Road  
Leeds LS2 3JH

## ARMAGEDDON



Armageddon is a new software house who already seems famous — its new science Armageddon contains the best graphics I've seen outside of Chinese games — as the Spectrum version.

Armageddon is like Conquest to begin with, as helicopter pads swarms down towards you. You are a smart-looking fighter and aside from lighting off the pads, you must also shoot a nasty looking strategic object that is threatening the Earth and its moon.

Other stages have the push imparted by a war-torn creature that drops bombs on you.

Armageddon could be one of the more important titles to emerge in the past couple of months in the Spectrum market.

**Program** Armageddon  
**Price** £4.95  
**Media** Spectrum 16-bit  
**Supplier** Armageddon  
15 Newmarket Road  
Saffron Walden

## LORD OF THE GALAXY

If you tired in software is towards adventures, away from arcade games, the other may be in the direction of board games which are computers.

If this is correct, then Matchstick must be one of the best games with two computer board games.

Galaxy Commander consists of a board, various counters and a computer program for the ZX81 and the Spectrum. It requires two players, who battle it out for galactic domination. This is achieved by the construction of vast interstellar spaceports called Colonies.

A board cost a 15 second deposit, the galaxy and the various planets to be found within it. Players must accumulate PJ energy to develop their fleet and do battle.

The computer records the state of the two players who must keep track of their units fleet at all times — forgetting about a ship 'parked' on the edge of the Galaxy will end with the computer telling you that your crew have run out of supplies and are starving.

The game is intended to last for several hours and there are endless different tactics you can adopt to win the game.

Versions of the game are available for most of the popular machines and it all costs a lot more than than Space Invaders or Pacman.

For a fuller explanation of the game, and the company behind it, see Street Life on page 12 of this week's issue.

**Program** Galaxy Commander  
**Price** £11.95  
**Media** ZX81 disk/Spectrum disk  
**Supplier** Matchstick Games  
4 Chillingworth Road  
Eastbourne, Sussex  
BN23 6ET

New Releases is designed to let people know what software is coming out in the market. If you have a new game or utility which you are about to release send a copy and accompanying details to: New Releases, Popular Computing Weekly, 12-13 Little Newport Street, London WC2A 3LD.



## Ziggurat



### What chance?

The chances of a random five-letter sequence being HAL is 1 in 1024 (ie 256 x 256 = 25).

Not very likely.

What is the probability of the arrangement HAL, ie HAL, or HALL? Exactly the same.

Finding that HAL, ie HAL, with the letters moved "back" one place in the alphabet are exposed that this is why HAL, ie as it is, Tracy Rider in *The Soul of a New Machine*, Penguin Books) makes a great deal of the fact that computer engineers in the USA were very fond of such words, and he actually mentions HAL and IBM.

What the arrangement of letters, therefore, mathematics and statistics can help us find a letter. The real argument is with our common-sense, and our beliefs and expectations.

The chance that the last sentence (ie "The real...") expectations" occurred at random is 1 in 256. There are 256 spaces and punctuation marks in the sentence and any one of them could be one of 26 possible letters, 10 possible numerals or, as we will assume, only two punctuation marks (and the space).

Expert systems for, say, drilling an oil well several open arguments to do with probabilities. Suppose we find a drilling vessel: is it a mug or a mug? Or is it neither — is it somewhere in between? What has been called "fuzzy logic" has been invented to help out here.

A drilling instrument, 25, is given a set of probabilities, the probability that it is a tap, and one probability that it is a mug. Probabilities are calculated by taking of the 25, and looking at the definitions of tap and mug. The probabilities are "conditional" on what we know about the 25.

As we find out more about the 25, the conditional probabilities will change, and perhaps at some point we might say "This is

almost certainly a mug". An expert system for oil drilling performs much the same routine: it says that either it seems worth drilling at that point, or it does not.

Joseph Louis Borges (in his story *The Library of Babel*) takes the very argument further than any other writer I know. He invents a world of hexagonal rooms, each interconnected to other hexagonal rooms, and the walls filled with books in some indecipherable language.

Clearly those who lived in this world discovered that "the Library is a sphere whose outer centre is any one of its hexagons and whose circumference is inaccessible". The Library was eternal.

The letters and symbols in the books listed 25, an alphabet of 26 letters, the comma, the full-stop, and the space (no upper-case letters were used).

The problem was to find a pattern — if such a thing existed — in the random sequences.

A student found two pages of one of the books had two pages of homogeneous text, which — after a hundred years — they established as "a Sumerian-Lithuanian dialect of Sumerian, with classical Arabic influences". Then a thinker made a guess that in the vast Library there were no less identical books.

Furthermore, it was assumed that the Library was total and its shelves contained all possible combinations of the 26 symbols — a large number, but not infinite.

Then others decided that on a shelf in some hexagon there must exist a book which is the formula and compendium of all the real, a catalogue.

If a book is possible, given the constraints of the alphabet and the size of the books (which were at least that the book must exist), "Only the impossible is excluded. For example, no book can be a ladder, although no doubt there are books which discuss and negate and demonstrate this possibility."

Borges' great originality takes HAL and similar questions, and reveals what can happen if we take the argument to extremes.

The question in Borges' story told how to locate the master catalogue.

The answer, "It was called the Catalogue Book, Book A, sometimes known as a depressive method. To locate Book A, consult first a Book B which indicates, Book A's position, to locate Book B, consult first a Book C, and so on to infinity..."

Stella Allen

## Puzzle

### Difficult customer for corner cafe

#### Puzzle No 23

We have just been to Barrylands-on-Sea for our holidays, but due to its generally mild weather a great deal of time was spent in the Caddy Corner Cafe.

On one particular occasion a slight difficulty arose when a customer requested bacon, egg and chips. As you can see from the menu this was a possibility that hadn't been catered for and it presented the cashier with quite a problem.

How much did each of the six items cost?

MENU	
Chicken and Chips	11.45
Steak and Chips	12.00
Steak and Eggs	13.50
Bacon and Eggs	11.00
Bacon and Chips	10.50
Chicken and Eggs	10.10

#### Solutions to Puzzle No 27

The program works out each possible number. As it is permitted to use the value '0', the 40 nearest jumps jump forward to 8 to show this.

```

10 LET T = 0
20 FOR A = 1 TO 9
30 FOR B = 1 TO 9
40 FOR C = 1 TO 9
50 FOR D = 1 TO 9
60 FOR E = 1 TO 9
70 FOR F = 1 TO 9
80 LET S = 100000A + 10000B + 1000C + 100D + 10E + F
90 IF S = 1000000 THEN PRINT S
100 NEXT F
110 NEXT E
120 NEXT D
130 NEXT C
140 NEXT B
150 NEXT A
160 GOTO 20
170 END

```

The total is 3,699,600 so it turned out to be not such a good deal for James. He found only gave him three computer exercises for winning out the answer.

#### Winner of Puzzle No 27

The winner is Paul Allen Cook, St Mark's Church, Gillingham, Dorsetshire, who received £10.

## Top 10

Rank	Book	Author
1	The Hobbit	J.R.R. Tolkien
2	The Lord of the Rings	J.R.R. Tolkien
3	The Silmarillion	J.R.R. Tolkien
4	The History of Middle-earth	J.R.R. Tolkien
5	The Hobbit	J.R.R. Tolkien
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